

DIVISION ON DYNAMICAL ASTRONOMY ABSTRACT FORM

Run. No. _____ Sess. No. _____
FOR EDITORIAL USE ONLY

The Observations of Neptune **by Lalande** in 1795

E. M. Standish (JPL/CalTech)

Fifty-one years before the "discovery" of the Neptune in 1846, the astronomer Michel Lalande observed that planet twice and recorded measurements of its position. These observations potentially give an accurate constraint on Neptune's orbit by extending the data arc by half a century. The two observations are consistent with each other (within one arcsecond), but they yield residuals between 7 and 15 arcseconds, depending upon which of the modern ephemerides they are reduced against. Further, it has not seemed possible to comfortably fit together both the Lalande observations and the rest of the observations of Neptune (transit measurements, 1846-present). This paper provides a more detailed fit to all of Lalande's observations on the two days in question (all wire crossings of stars and Neptune). It illustrates a number of interesting features, including blunderpoints, mis-recordings, etc.: it also gives a fair estimate of Lalande's measurement uncertainty. However, the final results still agree closely with those of Rawlins (1970): the Lalande residuals are inconsistent with the post-discovery Neptune observations, and the reason for this remains unknown.

Rawlins, D. 1970: "The Great Unexplained Residual in the Orbit of Neptune", Astron. J., 75, #7, 856-857.

ORAL PREFERRED ☒

POSTER PREFERRED ☐

PAPER PRESENTED BY

(Please Print, Must be First Author)

SPECIAL INSTRUCTIONS:



E. M. STANDISH

First Author's Address - Print

JPL 301-150

PASADENA CA 91109

E. M. Standish Jr.

Signature of First Author

Signature of Introducing Member,
if Author is a Nonmember

Phone: 818-54-3957

ABSTRACT FEES

Payment, by check or money order, enclosed with abstract: \$35

Payment, by purchase order: \$45

All payments and purchase orders must be made payable to AIP.

If you are paying by Purchase Order, you must complete this section. You agree to pay \$45 in partial support of the publication of the abstract in the Bulletin of the American Astronomical Society.

Date _____

Institution to be billed _____

Signature of Authorized Agent _____

Address _____

P.O.# _____

(Payable to American Institute of Physics)

IMPORTANT: If your institution requires a purchase order to cover our billing (and all branches of the government do), please have your purchasing agent include in the order the name of the journal, title and author(s), and identity of the meeting at which the abstracted paper was presented. Purchase orders should be made out to the order of: American Institute of Physics, Publication Charge and Reprint Section, 335 East 45th St., New York, NY 10017, as the Institute will bill you on our behalf. Make all checks payable to the American Institute of Physics. Purchase Orders should not contain shipping instructions as no reprints are offered for shipment; order is for a publishing charge only.

MAIL TO:

24th Meeting Abstract
Division on Dynamical Astronomy
Art Whipple
University of Texas
McDonald Observatory
Austin, TX 78712-1093

Abstract Submitted for the 24th DDA Meeting, ~~Chicago~~ SANTA BARBARA, CA.

Date Submitted 4/15/93

Form Version 3/92

FOR EDITORIAL USE ONLY

B A A S V O L N Q19